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(71) 出願人 000000952

カネボウ株式会社

東京都墨田区墨田五丁目17番4号

(71) 出願人 596154239

カネボウ合繊株式会社

大阪府大阪市北区梅田一丁目2番2号

(74) 代理人 100079382

弁護士 西藤 征彦

(72) 発明者 上田 秀夫

山口県防府市蓮紡町4番1号 カネボウ
合繊株式会社内

(72) 発明者 原 義智

山口県防府市蓮紡町4番1号 カネボウ
合繊株式会社内

最終頁に続く

(54) 【発明の名称】 衛生用繊維製品およびそれを用いた衛生用品

(57) 【要約】

【課題】 高い紫外線吸収作用を備え、通気性にも優れた衛生用繊維製品およびそれを用いた衛生用品を提供する。

【解決手段】 皮膚に貼着される貼付剤の基材や保護材等として用いられる繊維製品であって、繊維重量に対し紫外線吸収剤を0.05～1.0重量%含有し、波長290～400 nmの紫外線の透過率が4%以下、波長290～320 nmの紫外線の透過率が2%以下、波長290 nm以下の紫外線の透過率が1%以下に設定され、通気度が50 cc/c²・秒以上に設定されている。

【選択図】 なし

(2)

JP 2004-149430 A 2004

【特許請求の範囲】**【請求項 1】**

皮膚に貼着される貼付剤の基材や保護材等として用いられる繊維製品であって、繊維に対し紫外線吸収剤を0.05～1.0重量％含有し、波長290～400nmの紫外線の透過率が4％以下、波長290～320nmの紫外線の透過率が2％以下、波長2nm以下の紫外線の透過率が1％以下に設定され、通気度が50cc/cm²・秒に設定されていることを特徴とする衛生用繊維製品。

【請求項 2】

上記紫外線吸収剤が、繊維に吸着保持された状態で含有されている請求項1記載の衛生用繊維製品。

【請求項 3】

上記紫外線吸収剤が、繊維内に練り込み保持された状態で含有されている請求項1記載の衛生用繊維製品。

【請求項 4】

上記請求項1～3のいずれか一項の衛生用繊維製品を用いて構成されていることを特徴する衛生用品。

【請求項 5】

上記衛生用繊維製品を基材として用い、その片面に経皮吸収用の薬効成分が含有され着剤層を形成してなる貼付剤である請求項4記載の衛生用品。

【請求項 6】

上記衛生用繊維製品を、貼付剤保護用のシートもしくは包帯として用いてなる請求項記載の衛生用品。

【発明の詳細な説明】**【0001】****【発明の属する技術分野】**

本発明は、プラスター剤やパップ剤等、皮膚に貼着される貼付剤の基材もしくは保護して用いられる衛生用繊維製品およびそれを用いた衛生用品に関するものである。

【0002】**【従来の技術】**

従来から、プラスター剤やパップ剤等、皮膚に貼着して用いる貼付剤が多く用いられる。これらの貼付剤は、通常、シート状の基材片面に、薬効成分を含有する粘着剤層を形成して構成になっており、上記粘着剤層を、皮膚に直接貼り付けることにより、上記薬効成分を皮膚に吸収させるようになっている。

【0003】

このような貼付剤の薬効成分としては、外用鎮痛作用や消炎作用を有するものが好適いられるが、優れた鎮痛・消炎作用を有していても、光、特に紫外線に対する安定性が低く、屋外で日光にさらされる貼付剤には使用することができないものがある。

【0004】

そこで、貼付剤に用いる粘着剤自体に、紫外線吸収作用をもつ官能基を導入して、光性を高める技術（特許文献1参照。）や、貼付剤の基材として用いる繊維集合体に、酸化剤またはセラミックスの微粉末を含有させて紫外線透過率を低く抑える技術（特許文献2参照。）等が提案されている。

【0005】

(3)

JP 2004-149430 A 2004

剤成分や薬物の種類によって、導入できる官能基の種類や配合割合が限定されるため、ずしも高い紫外線吸収作用を付与することができないという問題や、紫外線吸収剤も、といっしょに経皮吸収されて悪影響を及ぼすおそれがあるという問題がある。また、金属酸化物等の微粉末を繊維集合体に含有させる方法では、焼却処分時に微粉末が灰して残留するため、処理コストが高くなるという問題がある。

【0007】

本発明は、このような事情に鑑みなされたもので、高い紫外線吸収作用を備え、通気も優れた衛生用繊維製品およびそれを用いた衛生用品の提供をその目的とする。

【0008】

【課題を解決するための手段】

上記の目的を達成するため、本発明は、皮膚に貼着される貼付剤の基材や保護材等と用いられる繊維製品であって、繊維重量に対し紫外線吸収剤を0.05～1.0重量有し、波長290～400nmの紫外線の透過率が4%以下、波長290～320nmの紫外線の透過率が2%以下、波長290nm以下の紫外線の透過率が1%以下に設定、通気度が50cc/cm²・秒以上に設定されている衛生用繊維製品を第1の要する。

【0009】

また、本発明は、そのなかでも特に、上記紫外線吸収剤が、繊維に吸着保持された状態含有されている衛生用繊維製品を第2の要旨とし、上記紫外線吸収剤が、繊維内に練り保持された状態で含有されている衛生用繊維製品を第3の要旨とする。

【0010】

さらに、本発明は、上記第1～3のいずれかの要旨である衛生用繊維製品を用いて構成されている衛生用品を第4の要旨とする。

【0011】

そして、本発明は、そのなかでも特に、上記衛生用繊維製品を基材として用い、そのに経皮吸収用の薬効成分が含有された粘着剤層を形成してなる貼付剤である衛生用品5の要旨とし、上記衛生用繊維製品を、貼付剤保護用のシートもしくは包帯として用なる衛生用品を第6の要旨とする。

【0012】

【発明の実施の形態】

つぎに、本発明の実施の形態について説明する。

【0013】

まず、本発明に用いられる紫外線吸収剤としては、ベンゾトリアゾール系、トリアジン系、ベンゾフェノン系、ベンゾエート系、ヒンダードアミン系等、各種のものをを用いることができるが、なかでも、少ない付与量で優れた効果を発揮する点で、ベンゾトリアゾール系のものが好適である。そして、特に、融点が130℃以上のものが好適である。すなわち、融点が130℃未満のものは、せっかく繊維に付着もしくは含有させても、加熱によって繊維表面からブリードしやすく、また皮膚に接触して肌やケ等のトラブルを招くおそれがあるからである。

【0014】

したがって、上記ベンゾトリアゾール系紫外線吸収剤としては、2-(2H-ベンゾアゾール-2-イル)-4,6-ビス(1-メチル-1-フェニルエチル)フェノール(融点137～141℃)、2-[クロロ(2H)-ベンゾトリアゾール-2-イル]

3, 5-ジ-tert-ブチル-4-ヒドロキシベンゾエート（融点192～197℃）が好適である。さらに、ヒンダードアミン系紫外線吸収剤としては、高分子量タイプブチルアミン・1, 3, 5-トリアジン・N・N'-ビス（2, 2, 6, 6-テトラル-4-ピペリジル-1, 6-ヘキサメチレンジアミンとN-（2, 2, 6, 6-テメチル-4-ピペリジル）ブチルアミンの重縮合物（融点130～136℃）や、低分子量タイプのビス（1, 2, 2, 6, 6-ペンタメチル-4-ピペリジル）[[3, 5-ス（1, 1-ジメチルエチル）-4-ヒドロキシフェニル]メチル]ブチルマロネー（融点146～150℃）が好適である。

【0016】

上記紫外線吸収剤を繊維製品に含有させる方法としては、例えば、▲1▼紫外線吸収剤、繊維に吸着保持させる方法や、▲2▼合成繊維、再生繊維等の繊維内に、上記紫外線吸収剤を練り込む方法等があげられる。

【0017】

上記▲1▼の、紫外線吸収剤を繊維に吸着保持させる方法では、適宜の形態の繊維に紫外線吸収剤が分散含有された処理液を供給して上記紫外線吸収剤を繊維に吸着させた、脱液・乾燥することにより、上記紫外線吸収剤を繊維に固定することが行われる。

【0018】

上記▲1▼の方法を適用する繊維の材質は、特に限定するものではなく、ポリエチチン、ポリプロピレン、ポリエステル、ポリアミド、アクリル、ビニロン、ポリウレタン、リ乳酸繊維等の合成繊維、アセテート等の半合成繊維、ビスコース・レーヨン等の再生繊維、木綿、麻、絹、羊毛等の天然繊維等、各種の繊維を用いることができる。もちろんこれらの繊維には、他の成分が配合されているものであっても差し支えない。

【0019】

そして、上記紫外線吸収剤を吸着させるときの繊維の形態は、モノフィラメント、マフィラメント、ステープルファイバー、紡績糸、フラットヤーン、チョップドストランド、スパンボンド等、どのような形であっても差し支えないが、通常、織・編地、不織の繊維構造品の形にした段階で行うことが好適である。

【0020】

これらの繊維への処理液（紫外線吸収剤を分散含有させたもの）の供給は、繊維の形態に応じて、適宜の方法が採用されるが、例えば、処理液に繊維品全体を含浸させる方法、パッド法やコーティング法、刷毛塗り、スプレー等、適宜の方法を用いることができる。また、パッケージ染色機、液流染色機等の機械を用い、例えば精練染色工程において染色用の処理液に紫外線吸収剤を分散含有させて供給することにより、染色と紫外線吸収剤の吸着を同時に行うと、効率がよく好適である。

【0021】

なお、繊維に対し、紫外線吸収剤を吸着固定することが難しい場合には、紫外線吸収剤、樹脂液等のバインダーに分散含有させて繊維表面に供給し、乾燥することにより、バインダーを介して繊維表面に固着させるようにしてもよい。このようなバインダーとし、繊維表面に耐久性のある樹脂皮膜を形成しうるものであれば、どのようなものでもよく、例えば、ポリウレタン系樹脂、アクリル系樹脂、シリコン系樹脂、酢酸ビニル樹脂、ポリビニルアルコール系樹脂、ポリエステル系樹脂、塩化ビニル系樹脂、合成ラテックス等の単体、または共重合体、もしくはこれらの混合物等が、好適に用いられる。

(5)

JP 2004-149430 A 2004

【0023】

上記紫外線吸収剤を練り込む繊維の材質は、練り込み可能なものであることが必要で、例えば、ポリエチレン、ポリプロピレン、ポリエステル、ポリアミド、アクリル、ビニ、ポリウレタン等の合成繊維、アセテート等の半合成繊維、ビスコース・レーヨン等、生繊維等があげられる。

【0024】

また、上記紫外線吸収剤を練り込む繊維の形態は、モノフィラメント、マルチフィラト、ステープルファイバー、紡績糸、フラットヤーン、チョップドストランド、スパンド等、どのような形であっても差し支えない。なお、芯鞘構造の複合繊維においての芯部分が鞘部分のどちらか一方に紫外線吸収剤を練り込むようにしてもよい。紫外線吸収剤が比較的高価であることから、このようにすると、紫外線吸収剤の使用量を低減ことができ、低コスト化を図ることができる。特に、鞘部分に紫外線吸収剤を練り込むものは、紫外線吸収性能が高く、好適である。また、芯部分に紫外線吸収剤を練り込むものは、紫外線吸収性能こそやや劣るものの、紫外線吸収剤が繊維表面にブリードしたため、使用できる紫外線吸収剤の幅が広がるという利点を有する。

【0025】

このようにして得られた紫外線吸収剤含有繊維製品は、各種衛生用品の材料として用いることができる。なお、本発明において、上記「衛生用品」とは、プラスター剤やパット等の貼付剤に限らず、絆創膏等の傷保護シート、これらを保護するガーゼ、包帯、重り用のシート、衛生テープ等を含む趣旨である。

【0026】

なお、本発明の衛生用繊維製品には、繊維重量に対し、紫外線吸収剤が0.05～1.0重量%含有されていなければならない。すなわち、紫外線吸収剤が0.05重量%未満は、十分な紫外線遮断効果が得られず、逆に、1.0重量%を超えると、効果としてそれ以上のものが得られず、紫外線吸収剤のコストが高くなるだけだからである。

【0027】

そして、上記紫外線吸収剤の含有により、繊維製品の紫外線吸収性能は、波長290～320nmの紫外線の透過率が4%以下、波長290～320nmの紫外線の透過率が以下、波長290nm以下の紫外線の透過率が1%以下となるよう設定されていなければならない。この範囲を満たすことにより、貼付剤に用いられる薬効成分が光安定性のものであっても、その効能を安定して保つことができる。また、粘着剤層における粘着剤が光によって経時的に劣化して粘着特性が低下することを防止することができる。なお、特に、波長290～400nmの紫外線の透過率が1%以下、波長290～320nmの紫外線の透過率が1%以下、波長290nm以下の紫外線の透過率が0.1%以下となるよう設定することが、効果の上で好適である。

【0028】

さらに、本発明の衛生用繊維製品は、通気度が、 $50 \text{ cc/cm}^2 \cdot \text{秒}$ 以上に設定されていなければならない。すなわち、通気度が $50 \text{ cc/cm}^2 \cdot \text{秒}$ 未満では、肌に間接した状態にすると、肌がむれて悪影響を及ぼすおそれがあるからである。

【0029】

なお、ポリエステルやナイロン等の合成繊維を用いる場合、繊維に酸化チタン(TiO₂)を配合してその光沢を調整することが、一般に行われているが、本発明では、光るブライト糸(通常、TiO₂ 0.1重量%未満)の他、セミダル糸(通常、TiO₂

(6)

JP 2004-149430 A 2004

になるような組成の繊維製品にすることが好適である。

【0031】

例えば、本発明の衛生用繊維製品を基布とし、その片面に、鎮痛・消炎作用を有する成分が含有された粘着剤層を形成することにより、貼付剤を得ることができる。この、衛生用繊維製品は、織・編地、不織布等の生地状の形態で用いられる。

【0032】

上記薬効成分としては、従来から経皮吸収薬として用いられているどのようなものでもよく、例えば、サリチル酸メチル、サリチル酸グリコール、1-メントール、トラシエキス、ノニル酸ワニリルアミド、ハッカ油、ジクロフェナク、イブプロフェン、インドメタシン、ケトプロフェン、ロキソプロフェン、スリンダク、トルメチン、ロベリット、ベニシラミン、フェンブフェン、フルルビプロフェン、ナブロキセン、プラロフェン、チアプロフェン、スプロフェン、フェルピナク、ケトロラク、オキサプロ、エトドラク、ザルトプロフィン、ピロキシカム、ペンタゾシン、塩酸ブプレノルフ、酒石酸ブトルファノール等およびそのエステル誘導体または塩等の非ステロイド系薬剤があげられる。

【0033】

また、プレドニゾロン、デキサメタゾン、ヒドロコルチゾン、ベタメタゾン、フルオド、フルオシノロンアセトニド、吉草酸酢酸プレドニゾロン、ジプロピオン酸デキサゾン、吉草酸フルコルトロン、ジフルプレドナート、吉草酸ベタメタゾン、酪酸ヒドルチゾン、酪酸クロバタゾン、酪酸ベタメタゾン、プロピオン酸クロバタゾン、コハデキサメタゾン、プレドニゾロン21-(2E, 6E)ファルネシート、吉草酸ヒドルチゾン、酢酸ジフロラゾン、プロピオン酸デキサメタゾン、ジプロピオン酸デキサゾン、アムシノニド、吉草酸デキサメタゾン、ハルシノニド、ブテソニド、プロピオアルクロメタゾン等のステロイド系抗炎症薬等があげられる。

【0034】

さらに、これらのエステル誘導体、アミド誘導体、アセタール誘導体、あるいは医学上許容される無機塩、有機塩の形態でもって膏体に含有または付着させたものであっていい。

【0035】

これらは、単独で用いても2種以上を併用してもよく、なかでも、光によって分解しにくいアミノ基やアミド基等を分子内に有しているものが、本発明の衛生用繊維製品の紫外線遮断特性によって、その分解が抑制されるため、好適である。なお、その使用量は、剤の種類、用途等に応じて適宜に設定される。

【0036】

そして、貼付剤の粘着剤層に用いられる粘着剤も、従来から貼付剤に用いられているようなものであってもよいが、特に、光劣化しやすい不飽和二重結合を有しているもの、本発明の衛生用繊維製品の紫外線遮断特性によって、その劣化が抑制されるため、好適である。このような粘着剤としては、アクリル系粘着剤、ゴム系粘着剤、ウレタン系粘着剤等があげられる。

【0037】

また、本発明の衛生用繊維製品は、貼付剤以外に、絆創膏等の傷保護シート、これら保護するガーゼ、包帯、重ね貼り用のシート、衛生テープ等に用いることができる。このうち、傷保護シートや重ね貼り用のシート、衛生テープ等に用いる場合は、貼付剤

(7)

JP 2004-149430 A 2004

【実施例 1】

ポリエステルofブライt仮撚糸 (56デシテックス／36フィラメント、TiO₂ 0.3重量%含有)を用い、下記の編成条件で編み立てることにより、コース：40本、54cm、ウェール：38本／2.54cm、幅176cm、長さ176m、重量6kgの編地を得た。

【0040】

[編成条件]

編成の種類 : インターロック編み

編み機 : 丸編機 (釜径30×2.54cm、ゲージ28本／2.54cm)

【0041】

そして、得られた編地に対し、以下の組成の処理液を用いて精練染色 (130℃×6)を行い、染色と紫外線吸収剤の付与を同時に行った。

【0042】

[処理液の組成]

染料

Miketon Polyester Yellow F3G Ultra
Conc (三井化学社製)

0.04%owf

Miketon Polyester Red FB Extra Con
c grain (三井化学社製)

0.04%owf

Dianix Blue FBL 150% (ダイスタージャパン社製)

0.02%owf

均染活性剤

1.5g／リットル

吸水剤

0.1%owf

酢酸

0.2g／リットル

紫外線吸収剤

2-(3'-tert-ブチル-2'-ヒドロキシ-5'-メチル-フェニ
ル)-5-クロロベンゾトリアゾール (融点：137℃)

0.5%owf

【0043】

そして、処理された編地に対し、仕上げ処理として、160℃×30秒でヒートセッ
を行い、コース：54本／2.54cm、ウェール：44本／2.54cm、幅74c
2、長さ115m、重量20.0kgの編地を得た。

【0044】

(8)

JP 2004-149430 A 2004

【0046】

【実施例4】

処理液中の紫外線吸収剤の配合量を、1.0%owfにした。それ以外は実施例3とにして、編地を得た。

【0047】

【実施例5】

糸として、ポリエステルのフルダル仮撚糸（56デシテックス／36フィラメント、 O_2 1.35重量%含有）を用いた。それ以外は、実施例1と同様にして、編地を得た。

【0048】

【実施例6】

処理液中の紫外線吸収剤の配合量を、1.0%owfにした。それ以外は実施例5とにして、編地を得た。

【0049】

【実施例7】

芯が、 TiO_2 を0.03重量%含有するポリエステルからなり、鞘が、 TiO_2 0.03重量%と、紫外線吸収剤である2-（2H-ベンゾトリアゾール-2-イル）4,6-ビス（1-メチル-1-フェニルエチル）フェノールを繊維重量に対し0.7重量%含有するポリエステルからなる、図1に示す芯鞘型の複合繊維（芯部aと鞘の重量比a:b=2:1）を準備した。図において、1は TiO_2 、2は紫外線吸収剤である。そして、この複合繊維から、ポリエステルのブライト仮撚糸（56デシテックス／36フィラメント、 TiO_2 0.03重量%含有）を得た。この糸を用いた以外実施例1と同様にして、編地を得た。

【0050】

【比較例1】

精練染色時の処理液に、紫外線吸収剤を配合しなかった。それ以外は、上記実施例1とにして、編地を得た。

【0051】

【比較例2】

精練染色時の処理液に、紫外線吸収剤を配合しなかった。それ以外は、上記実施例3とにして、編地を得た。

【0052】

【比較例3】

精練染色時の処理液に、紫外線吸収剤を配合しなかった。それ以外は、上記実施例5とにして、編地を得た。

【0053】

【比較例4】

精練染色時の処理液に、紫外線吸収剤を、0.03%owf配合した。それ以外は、実施例1と同様にして、編地を得た。

【0054】

【比較例5】

精練染色時の処理液に、紫外線吸収剤を、1.5%owf配合した。それ以外は、実施例1と同様にして、編地を得た。

(9)

JP 2004-149430 A 2004

【0056】

また、これらの編地を貼付剤用の基布として、片面にアクリル系樹脂粘着剤とパップ剤とを混合した粘着性組成物を、目付 20 g/m^2 で塗布することにより、パップを得た。そして、モニター10名の左手の手首近傍に貼付して外気にさらし、晴天の、で12時間過ごさせて、剥がれ具合を観察し、下記の3段階で、パップ剤の剥がれに評価した。。

◎…10名のパップ剤とも剥がれ始めなかった。

○…剥がれ始めるものもあったが、完全に剥がれ落ちるものはなかった。

×…完全に剥がれ落ちるものがあった。

【0057】

これらの結果を、下記の表1～表3に併せて示す。

【0058】

【表1】

		実 施 例				
		1	2	3	4	5
紫外線吸収剤含有量 (重量%)		0.5	1.0	0.5	1.0	0.5
紫外線透過度 (%)	290～ 400nm	0.47	0.23	0.40	0.19	0.22
	290～ 320nm	0.12	0.10	0.12	0.09	0.11
	290nm以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147	147	147
灰分 (重量%)		0.10	0.10	0.48	0.48	1.42
パップ剤の剥がれにくさ		○	◎	○	◎	◎

【0059】

【表2】

(10)

JP 2004-149430 A 2004

		実 施 例		比 較 例	
		6	7	1	2
紫外線吸収剤含有量 (重量%)		1.0	0.167	—	—
紫外線透過度 (%)	290～ 400nm	0.10	0.41	16.28	13.15
	290～ 320nm	0.07	0.11	2.09	1.85
	290nm以下	0.01 以下	0.01 以下	1.02	0.64
通気度 (cc/cm ² ・秒)		147	147	147	147
灰分 (重量%)		1.42	0.10	0.10	0.48
バップ剤の剥がれにくさ		◎	○	×	×

【0060】

【表3】

		比 較 例		
		3	4	5
紫外線吸収剤含有量 (重量%)		—	0.03	1.5
紫外線透過度 (%)	290～ 400nm	5.14	4.72	0.09
	290～ 320nm	1.23	1.21	0.07
	290nm以下	0.48	0.35	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147
灰分 (重量%)		1.42	0.10	0.10
バップ剤の剥がれにくさ				

(11)

JP 2004-149430 A 2004

115m、重量25.0kgの編地とした。このものの通気度は、 $38\text{cc}/\text{cm}^2$ 秒であり、通気性が悪いため、このものを基布として用いたパップ剤は、短時間で剥れて、使用感の悪いものであった。

【0062】

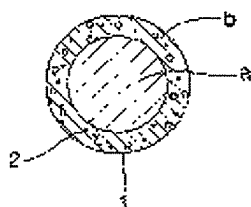
【発明の効果】

以上のように、本発明の衛生用繊維製品は、繊維重量に対し所定割合で紫外線吸収剤有され、優れた紫外線吸収性能を備えているとともに、良好な通気度が確保されていたがって、このものを用いた貼付剤等の衛生用品は、皮膚に貼着して経皮吸収させとする薬効成分が、光安定性の低いものであっても、これを貼付して屋外で長時間日当ても上記薬効成分が分解されず、長時間有効に作用するという効果を奏する。また貼付剤等に用いられる粘着剤も、光劣化することなく、その粘着性が損なわれない。長時間剥がれることがないという効果を奏する。

【図面の簡単な説明】

【図1】 本発明の一実施例における芯鞘型複合繊維の構成を示す説明図である。

【図1】



(12)

JP 2004-149430 A 2004

フロントページの続き

(72)発明者 本田 繁喜

山口県防府市縫紡町4番1号 カネボウ台織株式会社内

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JP 2004-149430 A5 200

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【手続補正書】
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 【手続補正 1】
 【補正対象書類名】 明細書
 【補正対象項目名】 0 0 2 0
 【補正方法】 変更
 【補正の内容】
 【0 0 2 0】

これらの繊維への処理液（紫外線吸収剤を分散含有させたもの）の供給は、繊維の
 に応じて、適宜の方法が採用されるが、例えば、処理液に繊維品全体を含浸させる方
 他、パッド法やコーティング法、刷毛塗り、スプレー等、適宜の方法を用いることが
 る。また、パッケージ染色機、液流染色機等の機械を用い、例えば精練染色工程にお
 、染色用の処理液に紫外線吸収剤を分散含有させて供給することにより、染色と紫外
 吸収剤の吸着を同時に行うと、効率がよく好適である。

【手続補正 2】
 【補正対象書類名】 明細書
 【補正対象項目名】 0 0 4 1
 【補正方法】 変更
 【補正の内容】
 【0 0 4 1】

そして、得られた編地に対し、以下の組成の処理液を用いて精練染色（130℃×
 分）を行い、染色と紫外線吸収剤の付与を同時に行った。

(2)

JP 2004-149430 A5 200

同様にして、縞地を得た。

【手続補正 4】

【補正対象書類名】明細書

【補正対象項目名】0051

【補正方法】変更

【補正の内容】

【0051】

【比較例 2】

精練染色時の処理液に、紫外線吸収剤を配合しなかった。それ以外は、上記実施例同様にして、縞地を得た。

【手続補正 5】

【補正対象書類名】明細書

【補正対象項目名】0052

【補正方法】変更

【補正の内容】

【0052】

【比較例 3】

精練染色時の処理液に、紫外線吸収剤を配合しなかった。それ以外は、上記実施例同様にして、縞地を得た。

【手続補正 6】

【補正対象書類名】明細書

【補正対象項目名】0053

【補正方法】変更

【補正の内容】

【0053】

【比較例 4】

精練染色時の処理液に、紫外線吸収剤を、0.03%owf 配合した。それ以外は、実施例 1 と同様にして、縞地を得た。

【手続補正 7】

【補正対象書類名】明細書

【補正対象項目名】0054

【補正方法】変更

【補正の内容】

【0054】

【比較例 5】

精練染色時の処理液に、紫外線吸収剤を、1.5%owf 配合した。それ以外は、実施例 1 と同様にして、縞地を得た。

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]

This invention relates to the textiles for health used as the base material or protection material of patches stuck on the skin, such as a plaster agent and cataplasms, and the sanitary goods using it.

[0002]

[Description of the Prior Art]

From the former, many patches stuck and used for the skins, such as a plaster agent and cataplasms, are used. These patches have the composition of having prepared the binder layer containing a drug effect component in sheet-like base material one side, and make the skin usually absorb the above-mentioned drug effect component by sticking the above-mentioned binder layer on the skin directly.

[0003]

Although what has an external use analgesic action and quenching is suitably used as a drug effect component of such patches, even if it has outstanding painkilling and quenching, the stability over light, especially ultraviolet rays is low, and there are some which cannot be used in the patches exposed outdoors to daylight.

[0004]

Then, the technique (patent reference 1 reference.) which introduces the functional group which has an ultraviolet absorption operation in the binder itself used for patches, and raises light stability, the technique (patent reference 2 reference.) of making the fiber aggregate used as a base material of patches containing the impalpable powder of a metallic oxide or the ceramics, and stopping ultraviolet-rays permeability low, etc. are proposed.

[0005]

[Patent reference 1]

JP,11-5962,A

[Patent reference 2]

The registration utility model No. 2538863 official report

[0006]

[Problem(s) to be Solved by the Invention]

However, by the approach of introducing the functional group which has an ultraviolet absorption operation in the above-mentioned binder itself, there are a problem that a high ultraviolet absorption operation cannot necessarily be given since the class and the blending ratio of coal of a functional group which can be introduced are limited by the class of a binder component or drug, and a problem that there is a possibility that percutaneous absorption also of the ultraviolet ray absorbent may be carried out together with a drug, and it may do a bad influence. Moreover, by the approach of making the fiber aggregate containing impalpable powder, such as the above-mentioned metallic oxide, in order that impalpable powder may remain as ash content at the time of incineration disposal, there is a problem that processing cost becomes high.

[0007]

This invention was made in view of such a situation, is equipped with a high ultraviolet absorption operation, and sets offer of the sanitary goods using the textiles for health and it excellent also in permeability as the purpose.

[0008]

[Means for Solving the Problem]

In order to attain the above-mentioned purpose, this invention is textiles used as a base material, protection material, etc. of the patches stuck on the skin. An ultraviolet ray absorbent is contained 0.05 to 1.0% of the weight to fiber weight. The permeability of ultraviolet rays with a wavelength of 290-400nm 4% or less, The permeability of ultraviolet rays with a wavelength of 290nm or less is set up for the permeability of ultraviolet rays with a wavelength of 290-320nm to 1% or less 2% or less, and permeability is 50 cc/cm². Let the textiles for health set up more than - second be the 1st summary.

[0009]

Moreover, especially this invention makes the 3rd summary the textiles for health contained after the above-mentioned ultraviolet ray absorbent made the 2nd summary the textiles for health contained for fiber where adsorption maintenance is carried out, the above-mentioned ultraviolet ray absorbent scoured and lump maintenance has been carried out into fiber also in it.

[0010]

Furthermore, this invention makes the 4th summary the sanitary goods constituted using the textiles for health which are the summaries of the 1-3rd either of the above.

[0011]

And this invention makes the 5th summary the sanitary goods which are the patches which come to form the binder layer which the drug effect component for percutaneous absorption contained on the one side also especially in it, using the above-mentioned textiles for health as a base material, and makes the 6th summary the sanitary goods which come to use the above-mentioned textiles for health as the sheet or dressings for patches protection.

[0012]

[Embodiment of the Invention]

Below, the gestalt of operation of this invention is explained.

[0013]

First, as an ultraviolet ray absorbent used for this invention, although various kinds of things, such as a benzotriazol system, a triazine system, a benzophenone system, a benzoate system, and a hindered amine system, can be used, it is the point of demonstrating the effectiveness excellent in the amount of grants small especially, and the thing of a benzotriazol system is suitable. And the melting point is suitable for a thing 130 degrees C or more especially. That is, it is because there is a possibility of being easy to carry out bleeding with heating etc. from a fiber front face, and contacting the skin, and causing troubles, such as skin YAKE, even if the melting point makes fiber adhere or contain a less than 130-degree C thing with much trouble.

[0014]

therefore, as the above-mentioned benzotriazol system ultraviolet ray absorbent 2-(2H-benzotriazol-2-IRU)-4, a 6-bis(1-methyl-1-phenylethyl) phenol (melting point of 137-141 degrees C), A 2-[chloro (2H)-benzotriazol-2-IRU]-4-methyl-6-(tert-butyl) phenol (melting point of 138-141 degrees C), A 2 and 4-G tert-butyl-6-(5-chlorobenzo triazole-2-IRU) phenol (melting point of 154-157 degrees C) etc. is suitable.

[0015]

Moreover, as the above-mentioned triazine system ultraviolet ray absorbent, a 2-(4, 6-diphenyl-triazine-2-IRU)-5-[(hexyl) oxy]-phenol (melting point of 148 degrees C) is suitable, and 2, 4-G tert-buthylphenyl -3, and 5-G tert-butyl-4-hydroxy benzoate (melting point of 192-197 degrees C) are suitable as the above-mentioned benzoate system ultraviolet ray absorbent. furthermore, as a hindered amine system ultraviolet ray absorbent Amount of giant molecules type dibutyl amine 1,3,5-triazine and a N-N'-screw (2, 2, 6, and 6-tetramethyl-4-piperidyl - 1 and 6-hexamethylenediamine and N-(2, 2, 6, and 6-tetramethyl-4-piperidyl) butylamine a polycondensation object) (Melting point of 130-136 degrees C) Low-molecular-weight type bis(1, 2, 2, 6, and 6-pentamethyl-4-piperidyl) [[5[3 and]-bis(1[1 and]-dimethyl ethyl)-4-hydroxyphenyl] Methyl] butyl malonate (melting point of 146-150 degrees C) is suitable.

[0016]

As an approach of making textiles containing the above-mentioned ultraviolet ray absorbent, for example **1 The approach of making fiber carrying out adsorption maintenance of the ultraviolet ray absorbent, and **2 The method of scouring the above-mentioned ultraviolet ray absorbent etc. is raised in fiber, such as a synthetic fiber and a regenerated fiber.

[0017]

Above-mentioned **1 By the approach of making fiber carrying out adsorption maintenance of ** and the

ultraviolet ray absorbent, after supplying the processing liquid with which distributed content of the ultraviolet ray absorbent was carried out to the fiber of a proper gestalt and making it adsorb the above-mentioned ultraviolet ray absorbent at fiber, fixing the above-mentioned ultraviolet ray absorbent to fiber is performed by deliquoring and drying.

[0018]

Above-mentioned **1 Especially the quality of the material of the fiber which applies ***** cannot be limited, and various kinds of fiber, such as natural fibers, such as regenerated fibers, such as semi-synthetic fibers, such as synthetic fibers, such as polyethylene CHIREN, polypropylene, polyester, a polyamide, an acrylic, Vinyon, polyurethane, and polylactic acid fiber, and acetate, and viscose rayon, cotton, hemp, silk, and wool, can be used for it. Of course, even if other components are blended, it does not interfere with these fiber.

[0019]

And although the gestalt of the fiber at the time of making the above-mentioned ultraviolet ray absorbent adsorb does not interfere no matter a monofilament, multifilament, a staple fiber, spun yarn, flat yarn, a chopped strand, span bond, etc. may be what forms, it is suitable for it to usually carry out in the phase made into the form of fiber structure articles, such as ** and knitting fabric, and a nonwoven fabric.

[0020]

Supply of the processing liquid (what carried out distributed content of the ultraviolet ray absorbent) to these fiber can use for processing liquid proper approaches, such as the others and pad method and a coating method, brush coating, and a spray, for example, although a proper approach is adopted according to the gestalt of fiber. [approach / of infiltrating the whole fiber article] Moreover, effectiveness is well suitable if adsorption of dyeing and an ultraviolet ray absorbent is performed to coincidence by making the processing liquid for dyeing carry out distributed content, and supplying an ultraviolet ray absorbent to it in a refinement dyeing process, using machines, such as a package dyeing machine and a jet dyeing machine.

[0021]

In addition, when it is difficult to carry out adsorption immobilization of the ultraviolet ray absorbent to fiber, binders, such as resin liquid, are made to carry out distributed content, an ultraviolet ray absorbent is supplied to a fiber front face, and you may make it make a fiber front face fix through a binder by drying. If a durable resin coat can be formed in a fiber front face as such a binder, you may be what kind of thing, for example, simple substances, such as polyurethane system resin, acrylic resin, silicon system resin, vinyl acetate system resin, polyvinyl alcohol system resin, polyester system resin, vinyl chloride system resin, and synthetic rubber latex, copolymers, or such mixture will be used suitably.

[0022]

On the other hand, **2 By the approach of scouring ** and an ultraviolet ray absorbent in fiber, carrying out addition mixing of the ultraviolet ray absorbent to a fiber raw material in the proper phase of a fiber production process is performed. For example, addition mixing was carried out, the after polymerization of the ultraviolet ray absorbent may be carried out to a raw material monomer, and addition mixing of the ultraviolet ray absorbent may be carried out at the polymer after polymerization termination. And spinning of the master chip can be formed and carried out from these ultraviolet ray absorbent content resin. Moreover, after fusing a resin chip and an ultraviolet ray absorbent, it may be made to carry out spinning.

[0023]

The quality of the material of the fiber which scours the above-mentioned ultraviolet ray absorbent needs for a scour lump to be possible, for example, regenerated fibers, such as semi-synthetic fibers, such as synthetic fibers, such as polyethylene, polypropylene, polyester, a polyamide, an acrylic, Vinyon, and polyurethane, and acetate, and viscose rayon, etc. are raised.

[0024]

Moreover, the gestalt of the fiber which scours the above-mentioned ultraviolet ray absorbent does not interfere, no matter a monofilament, multifilament, a staple fiber, spun yarn, flat yarn, a chopped strand, span bond, etc. may be what forms. In addition, you may make it scour an ultraviolet ray absorbent to either for a part for the core part sheath in the bicomponent fiber of sheath-core structure. From an ultraviolet ray absorbent being comparatively expensive, if it does in this way, the amount of the ultraviolet ray absorbent used can be reduced, and low cost-ization can be attained. Especially the thing that scoured the ultraviolet ray absorbent to a part for a sheath has the high ultraviolet absorption engine performance, and it is suitable for it. Moreover, although just the ultraviolet absorption engine performance is a little inferior, since an ultraviolet ray absorbent cannot carry

out bleeding of what scoured the ultraviolet ray absorbent to a part for a core part to a fiber front face easily, it has the advantage that the width of face of the ultraviolet ray absorbent which can be used spreads.

[0025]

Thus, the obtained ultraviolet ray absorbent content textiles can be used as an ingredient of various sanitary goods. In addition, in this invention, the above "sanitary goods" is blemish protection sheets, such as not only patches, such as a plaster agent and cataplasms, but an adhesive bandage, the gauze which protects these, dressings, and the meaning which piles up and sticks and contains the sheet of business, a health tape, etc.

[0026]

In addition, in the textiles for health of this invention, the ultraviolet ray absorbent must contain 0.05 to 1.0% of the weight to fiber weight. That is, it is because ultraviolet-rays screening effect with an ultraviolet ray absorbent sufficient at less than 0.05 % of the weight is not acquired, the thing beyond it will not be obtained as effectiveness if it exceeds 1.0 % of the weight conversely, but the cost of an ultraviolet ray absorbent only becomes high.

[0027]

And as for the ultraviolet absorption engine performance of textiles, the permeability of the ultraviolet rays whose permeability of ultraviolet rays with a wavelength of 290-400nm is 4% or less and the wavelength of 290-320nm must be set up by content of the above-mentioned ultraviolet ray absorbent so that the permeability of ultraviolet rays with 2% [or less] and a wavelength of 290nm or less may become 1% or less. Even if the drug effect component of light stability used for patches by filling this range is low, it is stabilized and that efficacy can be maintained. Moreover, it can prevent that the binder in a binder layer deteriorates with time by light, and an adhesion property falls. It is suitable on effectiveness that the permeability of the ultraviolet rays whose permeability of ultraviolet rays with a wavelength of 290-400nm is 1% or less and the wavelength of 290-320nm especially sets up especially so that the permeability of ultraviolet rays with 1% [or less] and a wavelength of 290nm or less may become 0.1% or less.

[0028]

Furthermore, for the textiles for health of this invention, permeability is 50 cc/cm². It must be set up more than - second. That is, permeability is 2 50cc/cm. It is because there is a possibility of the skin crowding together and doing a bad influence when it changes into the condition of having touched the skin for a long time under in - second.

[0029]

In addition, although blending titanium oxide (TiO₂) with fiber, and adjusting the gloss is generally performed when using synthetic fibers, such as polyester and nylon In this invention, the textiles which make semi dull yarn (usually TiO₂ 0.1 - less than 1 % of the weight) besides glossy bright yarn (less than 2 0.1 % of the weight of TiO(s) [Usually]) and full dull yarn (2 1 % of the weight or more of TiO(s) [Usually]) come to contain an ultraviolet ray absorbent can be used. Especially, the light reflex effectiveness of titanium oxide and the ultraviolet ray absorbent effectiveness by the ultraviolet ray absorbent can acquire the outstanding optical screening effect conjointly.

[0030]

However, in order to mitigate the burden on incineration processing since it remains as ash content when textiles are incinerated, it is suitable for additives, such as the above-mentioned titanium oxide, to make it textiles of a presentation with which the ash content after incineration becomes 3 or less % of the weight in this invention.

[0031]

For example, patches can be obtained by using the textiles for health of this invention as a base fabric, and forming the binder layer which the drug effect component which has painkilling and quenching on the one side contained. in this case, the textiles for health -- the ground of ** and knitting fabric, a nonwoven fabric, etc. -- it is used with the gestalt of a **.

[0032]

As the above-mentioned drug effect component, you may be what kind of thing used as a percutaneous absorption medicine from the former. For example, a methyl salicylate, a salicylic-acid glycol, 1-menthol, Capsici fructus extractives, a nonylic acid WANIRIRU amide, mentha oil, diclofenac, Ibuprofen, indomethacin, ketoprofen, loxoprofen, Sulindac, the tolmetin, lobenzarit, penicillamine, FEMPUFEN, Flurbiprofen, naproxen, pranoprofen, thia pro FEN, Non-steroidal anti-inflammatory drugs, such as the ester derivative or salts, such as

spurofen, felbinac, ketorolac, oxaprozin, etodolac, a ZARUTO pro fin, piroxicam, pentazocine, buprenorphine hydrochloride, and butorphanol tartrate, are raised.

[0033]

Moreover, prednisolone, dexamethasone, hydrocortisone, betamethasone, Full OSHINIDO, fluocinolone acetonide, prednisolone valerate acetate, Dipropionic acid dexamethasone, valeric-acid full cortolone, difluprednate, Betamethasone valerate, hydrocortisone butyrate, clobetasone butyrate, butanoic acid betamethasone, Propionic-acid clobetasone, succinic-acid dexamethasone, a prednisolone 21-(E [2], 6E) FARUNE sheet, Steroid system antiinflammatory drugs, such as valeric-acid hydrocortisone, diflorasone diacetate, dexamethasone propionate, dipropionic acid dexamethasone, amcinonide, dexamethasone valerate, halcinonide, BUTESONIDO, and alclometasone dipropionate, etc. are raised.

[0034]

Furthermore, you may make it contain or adhere to a plaster body that it is also at the gestalt of these ester derivatives, an amide derivative, an acetal derivative or the mineral salt permitted medically, and organic salt.

[0035]

Since the decomposition is controlled by the ultraviolet-rays barrier property of the textiles for health of this invention, what has in intramolecular the amino group which may use independently, or may use two or more sorts together, and is easy to decompose by light especially, an amide group, etc. is suitable for these. In addition, the amount used is suitably set up according to the class of patches, an application, etc.

[0036]

And although the binder used for the binder layer of patches may also be what kind of thing used for patches from the former, since the degradation is controlled by the ultraviolet-rays barrier property of the textiles for health of this invention, what has the partial saturation double bond which is especially easy to carry out photodegradation is suitable for it. As such a binder, an acrylic binder, a rubber system binder, an urethane system binder, etc. are raised.

[0037]

Moreover, in addition to patches, the textiles for health of this invention can be stuck in blemish protection sheets, such as an adhesive bandage, the gauze which protects these, dressings, and a pile, and can be used for the sheet of business, a health tape, etc. When sticking in a blemish protection sheet or a pile and using for the sheet of business, a health tape, etc. among these, a binder layer is formed in one side like patches. And when using for gauze, dressings, etc., it is used with ** and knitting fabric, or a nonwoven fabric. If the dressings and gauze of this invention are applied where the usual patches which the ultraviolet ray absorbent does not contain are attached inside when using for these applications, it will do the effectiveness of being controlled so that the drug effect component of the above-mentioned patches decomposes, or a binder layer deteriorates.

[0038]

Below, it combines with the example of a comparison and an example is explained.

[0039]

[Example 1]

Knitting fabric with course:402.54cm / wale:382.54cm / width of face of 176cm, a die length [of 176m], and a weight of 20.6kg was obtained by knitting up on the following organization conditions using the bright false twist yarn (56decitex / 36 filament, 2 0.03-% of the weight content of TiO(s)) of polyester.

[0040]

[Organization conditions]

Class of organization : ** edited by interlocking

Knitting machine : round-braid machine (30x2.54cm of furnace diameters, 28 gages / 2.54cm)

[0041]

And to the obtained knitting fabric, refinement dyeing (130 degree-Cx 60 minutes) was performed using the processing liquid of the following presentations, and grant of dyeing and an ultraviolet ray absorbent was performed to coincidence.

[0042]

[処理液の組成]

染料

Miketon Polyester Yellow F3G Ultra
Conc (三井化学社製)

0.04%owf

Miketon Polyester Red FB Extra Con
c grain (三井化学社製)

0.04%owf

Dianix Blue FBL 150% (ダイスタージャパン社製)

0.02%owf

均染活性剤

1.5g/リットル

吸水剤

0.1%owf

酢酸

0.2g/リットル

紫外線吸収剤

2-(3'-tert-ブチル-2'-ヒドロキシ-5'-メチル-フェニ
ル)-5-クロロベンゾトリアゾール (融点: 137℃)

0.5%owf

[0043]

And to the processed knitting fabric, as finishing processing, the heat setting was performed in 160 degree-Cx 30 seconds, and knitting fabric with course:542.54cm / wale:442.54cm / width-of-face 74cmx2, a die length [of 115m], and a weight of 20.0kg was obtained.

[0044]

[Example 2]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was obtained like the example 1 except it.

[0045]

[Example 3]

As yarn, the semi dull false twist yarn (56decitex / 36 filament, 2 0.4-% of the weight content of TiO(s)) of polyester was used. Knitting fabric was obtained like the example 1 except it.

[0046]

[Example 4]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was obtained like the example 3 except it.

[0047]

[Example 5]

As yarn, the full dull false twist yarn (56decitex / 36 filament, 2 1.35-% of the weight content of TiO(s)) of polyester was used. Knitting fabric was obtained like the example 1 except it.

[0048]

[Example 6]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was

obtained like the example 5 except it.

[0049]

[Example 7]

The heart is TiO₂. It consists of polyester contained 0.03% of the weight, and a sheath is TiO₂. The bicomponent fiber (weight ratio a:b= of a core part a and Sheath b 2:1) of the sheath-core mold shown in drawing 1 which becomes 0.03 % of the weight from 2-(2H-benzotriazol-2-IRU)-4 which are an ultraviolet ray absorbent, and the polyester which contains a 6-bis(1-methyl-1-phenylethyl) phenol 0.167% of the weight to fiber weight was prepared. Setting to drawing, 1 is TiO₂. 2 is an ultraviolet ray absorbent. And the bright false twist yarn (56decitex / 36 filament, 2 0.03-% of the weight content of TiO(s)) of polyester was obtained from this bicomponent fiber. Knitting fabric was obtained like the example 1 except having used this yarn.

[0050]

[The example 1 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0051]

[The example 2 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 3 except it.

[0052]

[The example 3 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 5 except it.

[0053]

[The example 4 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 0.03% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0054]

[The example 5 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 1.5% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0055]

About such example articles and the example article of a comparison, the ultraviolet-rays permeability in three kinds of wavelength range, the wavelength of 290-400nm, the wavelength of 290-320nm, and wavelength [of 290nm or less] **, was measured with the spectrophotometer. Moreover, it is JIS about the permeability of each knitting fabric. It measured according to the measuring method indicated by the item of the "permeability" of 6.29 of an L1079-1976"chemical fiber fabric test method." Furthermore, the rate to the weight before [whole] incineration was computed by having carried out incineration processing of each knitting fabric, and having measured the amount of the ash content which remained as the remainder according to the Japanese pharmacopoeia and the ash content measuring method of a crude drugs test.

[0056]

Moreover, it is the adhesive constituent which mixed an acrylic resin binder and the drugs for cataplasms for these knitting fabric on one side as a base fabric for patches Eyes 20 g/m² Cataplasms were obtained by applying. And stuck near the wrist on the left of ten monitors, exposed to the open air, it was made to pass on the outdoors of fine weather for 12 hours, peeling condition was observed, and the following three-stage estimated the difficulty of separating of cataplasms. .

O -- Ten persons' cataplasms did not begin to separate.

O -- There was nothing that separates completely and falls, although there were some which begin to separate.

x -- It separated completely and there were some which fall.

[0057]

These results are collectively shown in following Table 1 - 3.

[0058]

[Table 1]

		実 施 例				
		1	2	3	4	5
紫外線吸収剤含有量 (重量%)		0.5	1.0	0.5	1.0	0.5
紫外線透過度 (%)	290～ 400nm	0.47	0.23	0.40	0.19	0.22
	290～ 320nm	0.12	0.10	0.12	0.09	0.11
	290nm以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147	147	147
灰分 (重量%)		0.10	0.10	0.48	0.48	1.42
パップ剤の剥がれにくさ		○	◎	○	◎	◎

[0059]

[Table 2]

		実 施 例		比 較 例	
		6	7	1	2
紫外線吸収剤含有量 (重量%)		1.0	0.167	—	—
紫外線透過度 (%)	290～ 400 nm	0.10	0.41	16.28	13.15
	290～ 320 nm	0.07	0.11	2.09	1.85
	290 nm以下	0.01 以下	0.01 以下	1.02	0.64
通気度 (cc/cm ² ・秒)		147	147	147	147
灰分 (重量%)		1.42	0.10	0.10	0.48
パップ剤の剥がれにくさ		◎	○	×	×

[0060]

[Table 3]

		比 較 例		
		3	4	5
紫外線吸収剤含有量 (重量%)		—	0.03	1.5
紫外線透過度 (%)	290～ 400 nm	5.14	4.72	0.09
	290～ 320 nm	1.23	1.21	0.07
	290 nm以下	0.48	0.35	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147
灰分 (重量%)		1.42	0.10	0.10
パップ剤の剥がれにくさ		×	×	◎

[0061]

[The example 6 of a comparison]

The same processing as an example 1 was performed using the same yarn as an example 1. However, the finishing consistency considered as knitting fabric with course:622.54cm / wale:482.54cm / width-of-face 72cmx2, a die length [of 115m], and a weight of 25.0kg. The permeability of this thing is 38 cc/cm². It was - second, and since permeability was bad, in a short time, the skin was steamed and a feeling of use of cataplasms using this thing as a base fabric was bad.

[0062]

[Effect of the Invention]

As mentioned above, good permeability is secured while the textiles for health of this invention are equipped with the ultraviolet absorption engine performance which the ultraviolet ray absorbent contained and was excellent in the predetermined rate to fiber weight. Therefore, even if it sticks this even if the light stability of the drug effect component which is going to stick and carry out percutaneous absorption to the skin is low, and it exposes to long duration daylight outdoors, the above-mentioned drug effect component is not decomposed, but sanitary goods, such as patches using this thing, do so the effectiveness of acting on the long duration owner effect. Moreover, since the adhesiveness is not spoiled without carrying out photodegradation, the binder used for patches etc. also does so the effectiveness of not separating for a long time.

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the configuration of the sheath-core mold bicomponent fiber in one example of this invention.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]

This invention relates to the textiles for health used as the base material or protection material of patches stuck on the skin, such as a plaster agent and cataplasms, and the sanitary goods using it.

[0002]

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PRIOR ART

[Description of the Prior Art]

From the former, many patches stuck and used for the skins, such as a plaster agent and cataplasms, are used. These patches have the composition of having prepared the binder layer containing a drug effect component in sheet-like base material one side, and make the skin usually absorb the above-mentioned drug effect component by sticking the above-mentioned binder layer on the skin directly.

[0003]

Although what has an external use analgesic action and quenching is suitably used as a drug effect component of such patches, even if it has outstanding painkilling and quenching, the stability over light, especially ultraviolet rays is low, and there are some which cannot be used in the patches exposed outdoors to daylight.

[0004]

Then, the technique (patent reference 1 reference.) which introduces the functional group which has an ultraviolet absorption operation in the binder itself used for patches, and raises light stability, the technique (patent reference 2 reference.) of making the fiber aggregate used as a base material of patches containing the impalpable powder of a metallic oxide or the ceramics, and stopping ultraviolet-rays permeability low, etc. are proposed.

[0005]

[Patent reference 1]

JP,11-5962,A

[Patent reference 2]

The registration utility model No. 2538863 official report

[0006]

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EFFECT OF THE INVENTION

[Effect of the Invention]

As mentioned above, good permeability is secured while the textiles for health of this invention are equipped with the ultraviolet absorption engine performance which the ultraviolet ray absorbent contained and was excellent in the predetermined rate to fiber weight. Therefore, even if it sticks this even if the light stability of the drug effect component which is going to stick and carry out percutaneous absorption to the skin is low, and it exposes to long duration daylight outdoors, the above-mentioned drug effect component is not decomposed, but sanitary goods, such as patches using this thing, do so the effectiveness of acting on the long duration owner effect. Moreover, since the adhesiveness is not spoiled without carrying out photodegradation, the binder used for patches etc. also does so the effectiveness of not separating for a long time.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]

However, by the approach of introducing the functional group which has an ultraviolet absorption operation in the above-mentioned binder itself, there are a problem that a high ultraviolet absorption operation cannot necessarily be given since the class and the blending ratio of coal of a functional group which can be introduced are limited by the class of a binder component or drug, and a problem that there is a possibility that percutaneous absorption also of the ultraviolet ray absorbent may be carried out together with a drug, and it may do a bad influence. Moreover, by the approach of making the fiber aggregate containing impalpable powder, such as the above-mentioned metallic oxide, in order that impalpable powder may remain as ash content at the time of incineration disposal, there is a problem that processing cost becomes high.

[0007]

This invention was made in view of such a situation, is equipped with a high ultraviolet absorption operation, and sets offer of the sanitary goods using the textiles for health and it excellent also in permeability as the purpose.

[0008]

[Translation done.]

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MEANS

[Means for Solving the Problem]

In order to attain the above-mentioned purpose, this invention is textiles used as a base material, protection material, etc. of the patches stuck on the skin. An ultraviolet ray absorbent is contained 0.05 to 1.0% of the weight to fiber weight. The permeability of ultraviolet rays with a wavelength of 290-400nm 4% or less, The permeability of ultraviolet rays with a wavelength of 290nm or less is set up for the permeability of ultraviolet rays with a wavelength of 290-320nm to 1% or less 2% or less, and permeability is 50 cc/cm². Let the textiles for health set up more than - second be the 1st summary.

[0009]

Moreover, especially this invention makes the 3rd summary the textiles for health contained after the above-mentioned ultraviolet ray absorbent made the 2nd summary the textiles for health contained for fiber where adsorption maintenance is carried out, the above-mentioned ultraviolet ray absorbent scoured and lump maintenance has been carried out into fiber also in it.

[0010]

Furthermore, this invention makes the 4th summary the sanitary goods constituted using the textiles for health which are the summaries of the 1-3rd either of the above.

[0011]

And this invention makes the 5th summary the sanitary goods which are the patches which come to form the binder layer which the drug effect component for percutaneous absorption contained on the one side also especially in it, using the above-mentioned textiles for health as a base material, and makes the 6th summary the sanitary goods which come to use the above-mentioned textiles for health as the sheet or dressings for patches protection.

[0012]

[Embodiment of the Invention]

Below, the gestalt of operation of this invention is explained.

[0013]

First, as an ultraviolet ray absorbent used for this invention, although various kinds of things, such as a benzotriazol system, a triazine system, a benzophenone system, a benzoate system, and a hindered amine system, can be used, it is the point of demonstrating the effectiveness excellent in the amount of grants small especially, and the thing of a benzotriazol system is suitable. And the melting point is suitable for a thing 130 degrees C or more especially. That is, it is because there is a possibility of being easy to carry out bleeding with heating etc. from a fiber front face, and contacting the skin, and causing troubles, such as skin YAKE, even if the melting point makes fiber adhere or contain a less than 130-degree C thing with much trouble.

[0014]

therefore, as the above-mentioned benzotriazol system ultraviolet ray absorbent 2-(2H-benzotriazol-2-IRU)-4, a 6-bis(1-methyl-1-phenylethyl) phenol (melting point of 137-141 degrees C), A 2-[chloro (2H)-benzotriazol-2-IRU]-4-methyl-6-(tert-butyl) phenol (melting point of 138-141 degrees C), A 2 and 4-G tert-butyl-6-(5-chlorobenzo triazole-2-IRU) phenol (melting point of 154-157 degrees C) etc. is suitable.

[0015]

Moreover, as the above-mentioned triazine system ultraviolet ray absorbent, a 2-(4, 6-diphenyl-triazine-2-IRU)-5-[(hexyl) oxy-]-phenol (melting point of 148 degrees C) is suitable, and 2, 4-G tert-buthylphenyl -3, and 5-G tert-butyl-4-hydroxy benzoate (melting point of 192-197 degrees C) are suitable as the above-mentioned benzoate system ultraviolet ray absorbent. furthermore, as a hindered amine system ultraviolet ray absorbent

Amount of giant molecules type dibutyl amine 1,3,5-triazine and a N-N'-screw (2, 2, 6, and 6-tetramethyl-4-piperidyl - 1 and 6-hexamethylenediamine and N-(2, 2, 6, and 6-tetramethyl-4-piperidyl) butylamine a polycondensation object) (Melting point of 130-136 degrees C) Low-molecular-weight type bis(1, 2, 2, 6, and 6-pentamethyl-4-piperidyl) [[5[3 and]-bis(1[1 and]-dimethyl ethyl)-4-hydroxyphenyl] Methyl] butyl malonate (melting point of 146-150 degrees C) is suitable.

[0016]

As an approach of making textiles containing the above-mentioned ultraviolet ray absorbent, for example **1 The approach of making fiber carrying out adsorption maintenance of the ultraviolet ray absorbent, and **2 The method of scouring the above-mentioned ultraviolet ray absorbent etc. is raised in fiber, such as a synthetic fiber and a regenerated fiber.

[0017]

Above-mentioned **1 By the approach of making fiber carrying out adsorption maintenance of ** and the ultraviolet ray absorbent, after supplying the processing liquid with which distributed content of the ultraviolet ray absorbent was carried out to the fiber of a proper gestalt and making it adsorb the above-mentioned ultraviolet ray absorbent at fiber, fixing the above-mentioned ultraviolet ray absorbent to fiber is performed by deliquoring and drying.

[0018]

Above-mentioned **1 Especially the quality of the material of the fiber which applies ***** cannot be limited, and various kinds of fiber, such as natural fibers, such as regenerated fibers, such as semi-synthetic fibers, such as synthetic fibers, such as polyethylene CHIREN, polypropylene, polyester, a polyamide, an acrylic, Vinyon, polyurethane, and polylactic acid fiber, and acetate, and viscose rayon, cotton, hemp, silk, and wool, can be used for it. Of course, even if other components are blended, it does not interfere with these fiber.

[0019]

And although the gestalt of the fiber at the time of making the above-mentioned ultraviolet ray absorbent adsorb does not interfere no matter a monofilament, multifilament, a staple fiber, spun yarn, flat yarn, a chopped strand, span bond, etc. may be what forms, it is suitable for it to usually carry out in the phase made into the form of fiber structure articles, such as ** and knitting fabric, and a nonwoven fabric.

[0020]

Supply of the processing liquid (what carried out distributed content of the ultraviolet ray absorbent) to these fiber can use for processing liquid proper approaches, such as the others and pad method and a coating method, brush coating, and a spray, for example, although a proper approach is adopted according to the gestalt of fiber. [approach / of infiltrating the whole fiber article] Moreover, effectiveness is well suitable if adsorption of dyeing and an ultraviolet ray absorbent is performed to coincidence by making the processing liquid for dyeing carry out distributed content, and supplying an ultraviolet ray absorbent to it in a refinement dyeing process, using machines, such as a package dyeing machine and a jet dyeing machine.

[0021]

In addition, when it is difficult to carry out adsorption immobilization of the ultraviolet ray absorbent to fiber, binders, such as resin liquid, are made to carry out distributed content, an ultraviolet ray absorbent is supplied to a fiber front face, and you may make it make a fiber front face fix through a binder by drying. If a durable resin coat can be formed in a fiber front face as such a binder, you may be what kind of thing, for example, simple substances, such as polyurethane system resin, acrylic resin, silicon system resin, vinyl acetate system resin, polyvinyl alcohol system resin, polyester system resin, vinyl chloride system resin, and synthetic rubber latex, copolymers, or such mixture will be used suitably.

[0022]

On the other hand, **2 By the approach of scouring ** and an ultraviolet ray absorbent in fiber, carrying out addition mixing of the ultraviolet ray absorbent to a fiber raw material in the proper phase of a fiber production process is performed. For example, addition mixing was carried out, the after polymerization of the ultraviolet ray absorbent may be carried out to a raw material monomer, and addition mixing of the ultraviolet ray absorbent may be carried out at the polymer after polymerization termination. And spinning of the master chip can be formed and carried out from these ultraviolet ray absorbent content resin. Moreover, after fusing a resin chip and an ultraviolet ray absorbent, it may be made to carry out spinning.

[0023]

The quality of the material of the fiber which scours the above-mentioned ultraviolet ray absorbent needs for a

scour lump to be possible, for example, regenerated fibers, such as semi-synthetic fibers, such as synthetic fibers, such as polyethylene, polypropylene, polyester, a polyamide, an acrylic, Vinyon, and polyurethane, and acetate, and viscose rayon, etc. are raised.

[0024]

Moreover, the gestalt of the fiber which scours the above-mentioned ultraviolet ray absorbent does not interfere, no matter a monofilament, multifilament, a staple fiber, spun yarn, flat yarn, a chopped strand, span bond, etc. may be what forms. In addition, you may make it scour an ultraviolet ray absorbent to either for a part for the core part sheath in the bicomponent fiber of sheath-core structure. From an ultraviolet ray absorbent being comparatively expensive, if it does in this way, the amount of the ultraviolet ray absorbent used can be reduced, and low cost-ization can be attained. Especially the thing that scoured the ultraviolet ray absorbent to a part for a sheath has the high ultraviolet absorption engine performance, and it is suitable for it. Moreover, although just the ultraviolet absorption engine performance is a little inferior, since an ultraviolet ray absorbent cannot carry out bleeding of what scoured the ultraviolet ray absorbent to a part for a core part to a fiber front face easily, it has the advantage that the width of face of the ultraviolet ray absorbent which can be used spreads.

[0025]

Thus, the obtained ultraviolet ray absorbent content textiles can be used as an ingredient of various sanitary goods. In addition, in this invention, the above "sanitary goods" is blemish protection sheets, such as not only patches, such as a plaster agent and cataplasms, but an adhesive bandage, the gauze which protects these, dressings, and the meaning which piles up and sticks and contains the sheet of business, a health tape, etc.

[0026]

In addition, in the textiles for health of this invention, the ultraviolet ray absorbent must contain 0.05 to 1.0% of the weight to fiber weight. That is, it is because ultraviolet-rays screening effect with an ultraviolet ray absorbent sufficient at less than 0.05 % of the weight is not acquired, the thing beyond it will not be obtained as effectiveness if it exceeds 1.0 % of the weight conversely, but the cost of an ultraviolet ray absorbent only becomes high.

[0027]

And as for the ultraviolet absorption engine performance of textiles, the permeability of the ultraviolet rays whose permeability of ultraviolet rays with a wavelength of 290-400nm is 4% or less and the wavelength of 290-320nm must be set up by content of the above-mentioned ultraviolet ray absorbent so that the permeability of ultraviolet rays with 2% [or less] and a wavelength of 290nm or less may become 1% or less. Even if the drug effect component of light stability used for patches by filling this range is low, it is stabilized and that efficacy can be maintained. Moreover, it can prevent that the binder in a binder layer deteriorates with time by light, and an adhesion property falls. It is suitable on effectiveness that the permeability of the ultraviolet rays whose permeability of ultraviolet rays with a wavelength of 290-400nm is 1% or less and the wavelength of 290-320nm especially sets up especially so that the permeability of ultraviolet rays with 1% [or less] and a wavelength of 290nm or less may become 0.1% or less.

[0028]

Furthermore, for the textiles for health of this invention, permeability is 50 cc/cm². It must be set up more than - second. That is, permeability is 2 50cc/cm. It is because there is a possibility of the skin crowding together and doing a bad influence when it changes into the condition of having touched the skin for a long time under in - second.

[0029]

In addition, although blending titanium oxide (TiO₂) with fiber, and adjusting the gloss is generally performed when using synthetic fibers, such as polyester and nylon In this invention, the textiles which make semi dull yarn (usually TiO₂ 0.1 - less than 1 % of the weight) besides glossy bright yarn (less than 2 0.1 % of the weight of TiO(s) [Usually]) and full dull yarn (2 1 % of the weight or more of TiO(s) [Usually]) come to contain an ultraviolet ray absorbent can be used. Especially, the light reflex effectiveness of titanium oxide and the ultraviolet ray absorbent effectiveness by the ultraviolet ray absorbent can acquire the outstanding optical screening effect conjointly.

[0030]

However, in order to mitigate the burden on incineration processing since it remains as ash content when textiles are incinerated, it is suitable for additives, such as the above-mentioned titanium oxide, to make it textiles of a presentation with which the ash content after incineration becomes 3 or less % of the weight in this

invention.

[0031]

For example, patches can be obtained by using the textiles for health of this invention as a base fabric, and forming the binder layer which the drug effect component which has painkilling and quenching on the one side contained. in this case, the textiles for health -- the ground of ** and knitting fabric, a nonwoven fabric, etc. -- it is used with the gestalt of a **.

[0032]

As the above-mentioned drug effect component, you may be what kind of thing used as a percutaneous absorption medicine from the former. For example, a methyl salicylate, a salicylic-acid glycol, 1-menthol, Capsici fructus extractives, a nonylic acid WANIRIRU amide, mentha oil, diclofenac, Ibuprofen, indomethacin, ketoprofen, loxoprofen, Sulindac, the tolmetin, lobenzarit, penicillamine, FEMPUFEN, Flurbiprofen, naproxen, pranoprofen, thia pro FEN, Non-steroidal anti-inflammatory drugs, such as the ester derivative or salts, such as spurofen, felbinac, ketorolac, oxaprozin, etodolac, a ZARUTO pro fin, piroxicam, pentazocine, buprenorphine hydrochloride, and butorphanol tartrate, are raised.

[0033]

Moreover, prednisolone, dexamethasone, hydrocortisone, betamethasone, Full OSHINIDO, fluocinolone acetonide, prednisolone valerate acetate, Dipropionic acid dexamethasone, valeric-acid full cortolone, difluprednate, Betamethasone valerate, hydrocortisone butyrate, clobetasone butyrate, butanoic acid betamethasone, Propionic-acid clobetasone, succinic-acid dexamethasone, a prednisolone 21-(E [2], 6E) FARUNE sheet, Steroid system antiinflammatory drugs, such as valeric-acid hydrocortisone, diflorasone diacetate, dexamethasone propionate, dipropionic acid dexamethasone, amcinonide, dexamethasone valerate, halcinonide, BUTESONIDO, and alclometasone dipropionate, etc. are raised.

[0034]

Furthermore, you may make it contain or adhere to a plaster body that it is also at the gestalt of these ester derivatives, an amide derivative, an acetal derivative or the mineral salt permitted medically, and organic salt.

[0035]

Since the decomposition is controlled by the ultraviolet-rays barrier property of the textiles for health of this invention, what has in intramolecular the amino group which may use independently, or may use two or more sorts together, and is easy to decompose by light especially, an amide group, etc. is suitable for these. In addition, the amount used is suitably set up according to the class of patches, an application, etc.

[0036]

And although the binder used for the binder layer of patches may also be what kind of thing used for patches from the former, since the degradation is controlled by the ultraviolet-rays barrier property of the textiles for health of this invention, what has the partial saturation double bond which is especially easy to carry out photodegradation is suitable for it. As such a binder, an acrylic binder, a rubber system binder, an urethane system binder, etc. are raised.

[0037]

Moreover, in addition to patches, the textiles for health of this invention can be stuck in blemish protection sheets, such as an adhesive bandage, the gauze which protects these, dressings, and a pile, and can be used for the sheet of business, a health tape, etc. When sticking in a blemish protection sheet or a pile and using for the sheet of business, a health tape, etc. among these, a binder layer is formed in one side like patches. And when using for gauze, dressings, etc., it is used with ** and knitting fabric, or a nonwoven fabric. If the dressings and gauze of this invention are applied where the usual patches which the ultraviolet ray absorbent does not contain are attached inside when using for these applications, it will do the effectiveness of being controlled so that the drug effect component of the above-mentioned patches decomposes, or a binder layer deteriorates.

[0038]

Below, it combines with the example of a comparison and an example is explained.

[0039]

[Example 1]

Knitting fabric with course:402.54cm / wale:382.54cm / width of face of 176cm, a die length [of 176m], and a weight of 20.6kg was obtained by knitting up on the following organization conditions using the bright false twist yarn (56decitex / 36 filament, 2 0.03-% of the weight content of TiO(s)) of polyester.

[0040]

[Organization conditions]

Class of organization : ** edited by interlocking

Knitting machine : round-braid machine (30x2.54cm of furnace diameters, 28 gages / 2.54cm)

[0041]

And to the obtained knitting fabric, refinement dyeing (130 degree-Cx 60 minutes) was performed using the processing liquid of the following presentations, and grant of dyeing and an ultraviolet ray absorbent was performed to coincidence.

[0042]

[処理液の組成]

染料

M i k e t o n P o l y e s t e r Y e l l o w F 3 G U l t r a
C o n c (三井化学社製)

0・04%owf

M i k e t o n P o l y e s t e r R e d F B E x t r a C o n
c g r a i n (三井化学社製)

0・04%owf

D i a n i x B l u e F B L 1 5 0 % (ダイスタージャパン社製)

0・02%owf

均染活性剤

1.5g／リットル

吸水剤

0.1%owf

酢酸

0.2g／リットル

紫外線吸収剤

2 - (3 ' - t e r t - ブチル - 2 ' - ヒドロキシ - 5 ' - メチル - フェニ
ル) - 5 - クロロベンゾトリアゾール (融点 : 137℃)

0.5%owf

[0043]

And to the processed knitting fabric, as finishing processing, the heat setting was performed in 160 degree-Cx 30 seconds, and knitting fabric with course:542.54cm / wale:442.54cm / width-of-face 74cmx2, a die length [of 115m], and a weight of 20.0kg was obtained.

[0044]

[Example 2]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was obtained like the example 1 except it.

[0045]

[Example 3]

As yarn, the semi dull false twist yarn (56decitex / 36 filament, 2 0.4-% of the weight content of TiO(s)) of polyester was used. Knitting fabric was obtained like the example 1 except it.

[0046]

[Example 4]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was

obtained like the example 3 except it.

[0047]

[Example 5]

As yarn, the full dull false twist yarn (56decitex / 36 filament, 2 1.35-% of the weight content of TiO(s)) of polyester was used. Knitting fabric was obtained like the example 1 except it.

[0048]

[Example 6]

The loadings of the ultraviolet ray absorbent in processing liquid were set to owf 1.0%. Knitting fabric was obtained like the example 5 except it.

[0049]

[Example 7]

The heart is TiO₂. It consists of polyester contained 0.03% of the weight, and a sheath is TiO₂. The bicomponent fiber (weight ratio a:b= of a core part a and Sheath b 2:1) of the sheath-core mold shown in drawing 1 which becomes 0.03 % of the weight from 2-(2H-benzotriazol-2-IRU)-4 which are an ultraviolet ray absorbent, and the polyester which contains a 6-bis(1-methyl-1-phenylethyl) phenol 0.167% of the weight to fiber weight was prepared. Setting to drawing, 1 is TiO₂. 2 is an ultraviolet ray absorbent. And the bright false twist yarn (56decitex / 36 filament, 2 0.03-% of the weight content of TiO(s)) of polyester was obtained from this bicomponent fiber. Knitting fabric was obtained like the example 1 except having used this yarn.

[0050]

[The example 1 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0051]

[The example 2 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 3 except it.

[0052]

[The example 3 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 5 except it.

[0053]

[The example 4 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 0.03% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0054]

[The example 5 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 1.5% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[0055]

About such example articles and the example article of a comparison, the ultraviolet-rays permeability in three kinds of wavelength range, the wavelength of 290-400nm, the wavelength of 290-320nm, and wavelength [of 290nm or less] **, was measured with the spectrophotometer. Moreover, it is JIS about the permeability of each knitting fabric. It measured according to the measuring method indicated by the item of the "permeability" of 6.29 of an L1079-1976"chemical fiber fabric test method." Furthermore, the rate to the weight before [whole] incineration was computed by having carried out incineration processing of each knitting fabric, and having measured the amount of the ash content which remained as the remainder according to the Japanese pharmacopoeia and the ash content measuring method of a crude drugs test.

[0056]

Moreover, it is the adhesive constituent which mixed an acrylic resin binder and the drugs for cataplasms for these knitting fabric on one side as a base fabric for patches Eyes 20 g/m² Cataplasms were obtained by applying. And stuck near the wrist on the left of ten monitors, exposed to the open air, it was made to pass on the outdoors of fine weather for 12 hours, peeling condition was observed, and the following three-stage estimated the difficulty of separating of cataplasms. .

O -- Ten persons' cataplasms did not begin to separate.

O -- There was nothing that separates completely and falls, although there were some which begin to separate.

x -- It separated completely and there were some which fall.

[0057]

These results are collectively shown in following Table 1 - 3.

[0058]

[Table 1]

		実 施 例				
		1	2	3	4	5
紫外線吸収剤含有量 (重量%)		0.5	1.0	0.5	1.0	0.5
紫外線透過度 (%)	290～ 400nm	0.47	0.23	0.40	0.19	0.22
	290～ 320nm	0.12	0.10	0.12	0.09	0.11
	290nm以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147	147	147
灰分 (重量%)		0.10	0.10	0.48	0.48	1.42
パップ剤の剥がれにくさ		○	◎	○	◎	◎

[0059]

[Table 2]

		実 施 例		比 較 例	
		6	7	1	2
紫外線吸収剤含有量 (重量%)		1.0	0.167	—	—
紫外線透過度 (%)	290～ 400 nm	0.10	0.41	16.28	13.15
	290～ 320 nm	0.07	0.11	2.09	1.85
	290 nm以下	0.01 以下	0.01 以下	1.02	0.64
通気度 (cc/cm ² ・秒)		147	147	147	147
灰分 (重量%)		1.42	0.10	0.10	0.48
パップ剤の剥がれにくさ		◎	○	×	×

[0060]

[Table 3]

		比 較 例		
		3	4	5
紫外線吸収剤含有量 (重量%)		—	0.03	1.5
紫外線透過度 (%)	290～ 400 nm	5.14	4.72	0.09
	290～ 320 nm	1.23	1.21	0.07
	290 nm以下	0.48	0.35	0.01 以下
通気度 (cc/cm ² ・秒)		147	147	147
灰分 (重量%)		1.42	0.10	0.10
パップ剤の剥がれにくさ		×	×	◎

[0061]

[The example 6 of a comparison]

The same processing as an example 1 was performed using the same yarn as an example 1. However, the finishing consistency considered as knitting fabric with course:622.54cm / wale:482.54cm / width-of-face 72cmx2, a die length [of 115m], and a weight of 25.0kg. The permeability of this thing is 38 cc/cm2. It was - second, and since permeability was bad, in a short time, the skin was steamed and a feeling of use of cataplasms using this thing as a base fabric was bad.

[0062]

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the explanatory view showing the configuration of the sheath-core mold bicomponent fiber in one example of this invention.

[Translation done.]

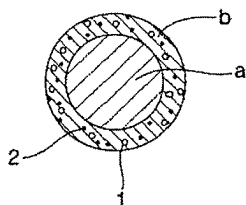
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DRAWINGS

[Drawing 1]



[Translation done.]

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CORRECTION OR AMENDMENT

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 A61F 13/02 310 Z
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[Procedure revision]
 [Filing Date] August 12, Heisei 16 (2004. 8.12)
 [Procedure amendment 1]
 [Document to be Amended] Specification
 [Item(s) to be Amended] 0020
 [Method of Amendment] Modification
 [The contents of amendment]
 [0020]

Supply of the processing liquid (what carried out distributed content of the ultraviolet ray absorbent) to these fiber can use for processing liquid proper approaches, such as the others and pad method and a coating method, brush coating, and a spray, for example, although a proper approach is adopted according to the gestalt of fiber. [approach / of infiltrating the whole fiber article] Moreover, effectiveness is well suitable if adsorption of dyeing and an ultraviolet ray absorbent is performed to coincidence by making the processing liquid for dyeing carry out distributed content, and supplying an ultraviolet ray absorbent to it in a refinement dyeing process, using machines, such as a package dyeing machine and a jet dyeing machine.

[Procedure amendment 2]
 [Document to be Amended] Specification
 [Item(s) to be Amended] 0041
 [Method of Amendment] Modification
 [The contents of amendment]

[0041]

And to the obtained knitting fabric, refinement dyeing (130 degree-Cx 60 minutes) was performed using the processing liquid of the following presentations, and grant of dyeing and an ultraviolet ray absorbent was performed to coincidence.

[Procedure amendment 3]

[Document to be Amended] Specification

[Item(s) to be Amended] 0050

[Method of Amendment] Modification

[The contents of amendment]

[0050]

[The example 1 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[Procedure amendment 4]

[Document to be Amended] Specification

[Item(s) to be Amended] 0051

[Method of Amendment] Modification

[The contents of amendment]

[0051]

[The example 2 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 3 except it.

[Procedure amendment 5]

[Document to be Amended] Specification

[Item(s) to be Amended] 0052

[Method of Amendment] Modification

[The contents of amendment]

[0052]

[The example 3 of a comparison]

An ultraviolet ray absorbent was not blended with the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 5 except it.

[Procedure amendment 6]

[Document to be Amended] Specification

[Item(s) to be Amended] 0053

[Method of Amendment] Modification

[The contents of amendment]

[0053]

[The example 4 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 0.03% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[Procedure amendment 7]

[Document to be Amended] Specification

[Item(s) to be Amended] 0054

[Method of Amendment] Modification

[The contents of amendment]

[0054]

[The example 5 of a comparison]

owf combination of the ultraviolet ray absorbent was carried out 1.5% at the processing liquid at the time of refinement dyeing. Knitting fabric was obtained like the above-mentioned example 1 except it.

[Translation done.]